

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

ON SEMICONDUCTOR CORP. and	)	
SEMICONDUCTOR COMPONENTS	)	
INDUSTRIES, L.L.C.,	)	
Plaintiffs,	)	
v.	)	C.A. No. 07-449 (JJF)
SAMSUNG ELECTRONICS CO., LTD.,	)	
SAMSUNG ELECTRONICS AMERICA, INC.,	)	
SAMSUNG TELECOMMUNICATIONS	)	REDACTED PUBLIC
AMERICA GENERAL, L.L.C.,	)	VERSION
SAMSUNG SEMICONDUCTOR, INC., and	)	
SAMSUNG AUSTIN SEMICONDUCTOR L.L.C.,	)	
Defendants.	)	
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SAMSUNG ELECTRONICS CO., LTD.,	)	
SAMSUNG ELECTRONICS AMERICA, INC.,	)	
SAMSUNG TELECOMMUNICATIONS	)	
AMERICA GENERAL, L.L.C.,	)	
SAMSUNG SEMICONDUCTOR, INC., and	)	
SAMSUNG AUSTIN SEMICONDUCTOR L.L.C.,	)	
Plaintiffs,	)	C.A. No. 06-720 (JJF)
v.	)	
ON SEMICONDUCTOR CORP. and	)	
SEMICONDUCTOR COMPONENTS	)	
INDUSTRIES, L.L.C.,	)	
Defendants.	)	

**ON SEMICONDUCTOR'S OPENING BRIEF IN SUPPORT OF ITS  
MOTION TO COMPEL DISCOVERY CONCERNING INFRINGEMENT**

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### NATURE AND STAGE OF THE PROCEEDINGS

Almost twenty months ago, Samsung<sup>1</sup> started this lawsuit when it filed a declaratory judgment action in this Court seeking a declaration of noninfringement and invalidity with respect to three ON Semiconductor<sup>2</sup> patents. (C.A. No. 06-720 (D.I. 1). Despite the rapid approach of the end of fact discovery on August 29, and of the deadline for opening expert reports on September 15, Samsung is refusing to produce very basic information that was first requested as early as March 26, 2007.

Having provided Samsung with a number of opportunities to comply with the discovery requests, ON Semiconductor has reluctantly moved to compel Samsung to produce discovery relevant to infringement issues. This is ON Semiconductor's opening brief in support of that motion.

### SUMMARY OF ARGUMENT

The information at issue here relates to a specific method for manufacturing integrated circuits and is relevant to the question of infringement of ON Semiconductor's Patent No. 5,000,827 ("the '827 patent"). Initially, ON Semiconductor focused on Samsung's use of the Novellus Sabre<sup>®</sup> machines used for manufacturing integrated circuits as potentially infringing this patent and requested documents and testimony regarding Samsung's use of these machines.

[REDACTED]

[REDACTED]

[REDACTED]

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<sup>1</sup> "Samsung" refers collectively to Samsung Electronics Co., Ltd., Samsung Electronics America, Inc., Samsung Telecommunications America General, L.L.C., Samsung Semiconductor, Inc. and Samsung Austin Semiconductor, L.L.C.

<sup>2</sup> "ON Semiconductor" refers collectively to ON Semiconductor Corp. and Semiconductor Components Industries, L.L.C.

[REDACTED] Notwithstanding this admission, as well as Samsung's representation to ON Semiconductor (and the Court) that it would "give" ON Semiconductor "[w]hat [it] need[s] to know about the Novelis [sic] machine or what the Novelis [sic] machine does at Samsung" (D.I. 116 at 27:1-15), Samsung has refused to produce the very sample wafers that it electroplates with the Novellus Sabre® machines, and that even Samsung concedes are relevant to the question of infringement of the '827 patent. Also, despite its assurances, Samsung still refuses to provide design rules detailing the dimensions of the trenches, vias and pads that are being plated with the Novellus Sabre® machines, which are also highly relevant to the question of infringement of this patent.

Samsung also provides no substantive response to any of ON Semiconductor's interrogatories seeking information sufficient to identify the end retail products to which the accused processes and apparatus correspond. This is necessary to support ON Semiconductor's claims for infringement and damages. Samsung has exclusive control over the information used to correlate its products with manufacturing processes and circuit designs used to make those products. ON Semiconductor respectfully requests that the Court order Samsung to produce the following categories of discovery it has withheld:

- [REDACTED]
- [REDACTED]
- [REDACTED]

- 3) Documents and information sufficient to correlate the Samsung accused products with the manufacturing process or design to the retail product or end product as requested in ON Semiconductor's Interrogatory Nos. 9, 28 and 29.

**STATEMENT OF FACTS**

I. SAMSUNG HAS REFUSED TO PRODUCE DOCUMENTS AND PRODUCTION SAMPLES RELEVANT TO THE ISSUE OF INFRINGEMENT OF THE '827 PATENT.

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ON Semiconductor contends that Samsung infringes the '827 patent by its use of Novellus Sabre® machines to make certain integrated circuit products. The '827 patent generally relates to a method of electroplating uniform height metallization bumps across a wafer. (D.I. 8 Ex. D.) [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

ON Semiconductor has repeatedly sought discovery from Samsung about its use of the Novellus Sabre® machines, including serving interrogatories 1-1/2 years ago seeking, among other things, the factual basis for Samsung's non-infringement contentions as well as an identification of "*all* documents and *evidence*" relating to those contentions. (*Id.* Ex. B.) ON Semiconductor also served document requests, including Request Nos. 106-110, which ask for documents showing or otherwise concerning electroplating systems and methods used to make the Samsung accused products, including "Novellus Sabre® system," and Request Nos. 186, 191 and 193, which seek, among other documents, "design rules" for the metal layers formed on the trenches, vias, contacts and pad areas for the accused products. (*Id.* Exs. D, E and F.)

At the March 8, 2008 hearing on ON Semiconductor's motion to compel, Samsung represented to ON Semiconductor (and the Court) that it would provide the requested documents and information about Novellus Sabre® machines (D.I. 116 at 27:1-15):<sup>3</sup>

What they need to know about the Novelis [sic] machine or what the Novelis [sic] machine does at Samsung, I will give them that information . . . They identified five machines, we only use one of them, and we don't use it for the reason that they think. So maybe in light of their reply brief we can work this out.

Samsung has not produced much of the information regarding the plating profile at the trenches, vias, and pads, as it represented to the Court it would provide, however.<sup>4</sup>

Indeed, the discovery Samsung has provided to date about this issue has been through the testimony of its Rule 30(b)(6) witness, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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<sup>3</sup> ON Semiconductor was "granted leave to renew" its prior motion on the '827 patent. (D.I. 116 at 36:16-37:4.)

<sup>4</sup> Samsung also refuses to provide documentation on the electroplating process, such as flow rate, plating height, and plating time. (August 11 letter from Corbett to Garcia at pp. 2-3.)

<sup>5</sup>

[REDACTED]

This information is crucial as even Samsung admitted in its claim construction briefs that the pad area corresponds to the terminal areas, i.e., the location where the metallization bumps are recited in the claims to be formed. (D.I. 131 at p. 12..)

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Not only has Samsung not produced wafers that are highly relevant to this question, but Samsung has also failed to produce design rules for forming the trenches, vias, and pads. Among other things, design rules specify minimum and maximum trench widths, line widths, height of the trenches, spacing between the trenches, and other information relating to the geometry and structure of the pads. (Walker Decl. at 10.) As ON Semiconductor's expert, Dr. Martin Walker, explains in his declaration this information is relevant to determining the extent to which other Samsung documents that show the existence, or lack of, "bumps" in the plated features (such as trenches, vias, or pads, for example) are representative of Samsung's processes. (Walker Decl. at 9-14.) During his deposition, [REDACTED]

[REDACTED]

Immediately following [REDACTED] deposition, ON Semiconductor requested by letter dated July 1, 2008, that Samsung produce design documents that show the aspect ratio (width vs. height) for the trenches, vias, and pads. (*Id.* Ex. A.) ON Semiconductor again requested this information on July 8. (*Id.*) ON Semiconductor again followed up on July 21 and requested to meet and confer given Samsung's lack of response. (*Id.*) At the scheduled July 31 meet and confer session, ON Semiconductor again requested that Samsung produce the design

rules as well as samples of production wafers.<sup>6</sup> ON Semiconductor again followed up by letter dated August 5, requesting again the production of sample wafers and design rules. (*Id.*)

Samsung finally responded on August 11, refusing this request. (*Id.*..) It argued that the request was “irrelevant” because Samsung allegedly does not form metallization bumps and the plating results in a “planar flat surface,” and the “area of the trenches is flat.” (*Id.*.) It further sought to avoid production by arguing that the requested materials do not fall under existing document requests, notwithstanding its representation to ON Semiconductor and the Court that it would provide information about the use of the Novellus machines and the fact that the present request was based on the recent deposition testimony of [REDACTED]

**II. SAMSUNG HAS REFUSED TO PROVIDE CORRELATION INFORMATION FOR THE ACCUSED PRODUCTS AS REQUIRED BY INTERROGATORY NOS. 9, 28 AND 29.**

Samsung also has refused to provide information sufficient to correlate the products made by certain processes or designs. During the parties’ July 31, 2008 meet and confer, Samsung acknowledged that many of its interrogatory responses were deficient, and that it would supplement those responses. (*Id.*) Despite its recent supplementation, however, many of those responses remain inadequate, including Samsung’s responses to Interrogatory Nos. 9, 28 and 29. (*Id.*)

Specifically, Interrogatory No. 9 seeks information concerning Samsung’s products that have been made through electroplating by the Novellus Sabre® machines such as: a) internal part numbers; b) retail name(s) or other retail product identification information; c) the description of all component parts; and d) the manufacturing process for each. Rather than

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<sup>6</sup> Samsung requested during the conference that ON Semiconductor provide a specific cite to the [REDACTED] transcript so that Samsung could consider its request for sample wafers. Although ON Semiconductor provided this information on August 5, Samsung still refused to produce sample wafers. (Ex. H.)

providing the information requested, Samsung merely identified, by bates range, various Novellus manuals such as Novellus Maintenance Procedures manuals that describe, among other things, how to inspect the Novellus machine for leaks. (*Id.* Ex. I.) To date, Samsung has not responded to ON Semiconductor's request that it cure these continuing deficiencies in its response.

ON Semiconductor's Interrogatory Nos. 28<sup>7</sup> and 29<sup>8</sup> seek similar correlation information. These interrogatories are directed, however, to correlating circuit and layout designs obtained during discovery with Samsung's end products sold in the United States.

On March 10, 2008, the Court granted ON Semiconductor's motion to compel, and ordered Samsung to produce the circuit and layout designs related to the Circuit Patents. (March 8, 2008 Oral Order.) Although Samsung ultimately produced these designs, it did so with very limited documentation as to their content and structure. Accordingly, ON Semiconductor has sought further and necessary information from Samsung.

As a result of this process, Samsung has provided certain information correlating some of its circuit designs to layout designs as requested in Interrogatory No. 29. (*See* Bauer Decl. Ex. J.) Indeed, in an apparent effort to stave off the prior motion to compel, Samsung

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<sup>7</sup> Interrogatory No. 28 seeks, specifically, identification of: a) the correlation between circuit designs as maintained within Basecamp and the layout designs as maintained within Virtuoso; b) the correlation between Virtuoso and any internal part number(s) and any internal product identification (e.g. name, number, codes, etc.) used by Samsung to identify each such product and products' storage capacity; c) the correlation between internal part number(s), retail name(s), and any other retail product identification information and that products' storage capacity; d) the correlation between designs maintained within Basecamp and retail name(s) and any other retail product identification information and the products' storage capacity; e) the correlation between designs maintained within Virtuoso and the retail name(s) and any other retail product identification information and the products' storage capacity. (Ex. K.)

<sup>8</sup> Interrogatory No. 29 seeks, specifically, identification of the name and any other designation assigned to: a) each circuit designed as maintained within Basecamp; and b) each layout design as maintained within Virtuoso. (*Id.*)

provided information correlating certain of its end products to circuit designs in response to Interrogatory No. 28. (*Id.*) Thus, Samsung has demonstrated that it has ready access to the information sought in Interrogatory Nos. 28 and 29. But Samsung still has not verified this previously provided information, however. Absent information correlating Samsung's design documents with the accused products, ON Semiconductor is unable to further supplement its infringement contentions or prepare its case for trial.

As in its response to Interrogatory No. 29, rather than completing the compilation of correlation information it previously provided, Samsung now relies only on the identification of documents with disconnected information. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED],

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

## ARGUMENT

### I. SAMSUNG SHOULD BE COMPELLED TO PRODUCE SAMPLE WAFERS AND DESIGN RULES RELEVANT TO ITS INFRINGEMENT OF THE '827 PATENT.

Samsung's refusal to provide discovery based on its unilateral assertion that its plating process does not form the claimed bumps is in violation of, and inconsistent with, the principle of broad discovery allowed under the Federal Rules. *See e.g.*, Fed. R. Civ. P. 26(b)(1). Samsung is not the final arbiter and cannot refuse to produce the wafers and design rules based on its unilateral assertion that it does not form "metallization bumps." ON Semiconductor

disagrees with Samsung's position and asserts that Samsung electroplates a metallization layer that is non-planar over the trenches, vias, and/or the pad areas, thus forming the claimed metallization bumps.<sup>9</sup> (April 11 Supp. Responses to Samsung's Interrogatories at pp. 18-20; July 18 Supp. Responses to Samsung's Interrogatories at pp. 2-13.) ON Semiconductor is entitled to the sample wafers and design rules to obtain evidence in support of its infringement contentions.

Moreover, the discovery ON Semiconductor seeks is plainly relevant. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Indeed, Samsung has inquired in connection with its own '177 patent whether ON Semiconductor produce sample wafers from its process so that Samsung can determine the thickness of an oxide layer that is alleged to form on the ON Semiconductor wafers. (*Id.* Ex. H.) Unlike Samsung, subject to certain conditions, ON Semiconductor can agree to producing sample wafers.

Samsung should also be compelled to produce the requested design rules because they are relevant to determining the existence of metallization bumps on the wafers. The ratio of the width and height may effect whether the metallization will be non-planar. (Walker Decl. at 12-13.) Indeed, Samsung's own documents show that the [REDACTED]

[REDACTED] (see Walker Decl. at 13; Ex. C to the Walker Decl. [REDACTED]

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<sup>9</sup> Samsung also ignores that the meaning of the claim term "metallization bumps" is disputed. ON Semiconductor has proposed that "metallization layer" should be construed as "a non-planar accumulation of a metal layer or layers." (D.I. 125 at pp. 50-52.) At least under ON Semiconductor's construction, Samsung forms the claimed metallization bumps.

II. SAMSUNG SHOULD BE COMPELLED TO PROVIDE CORRELATION INFORMATION FOR THE ACCUSED PRODUCTS.

The information that ON Semiconductor requested in Interrogatory Nos. 9, 28 and 29 is clearly relevant to determining, for example, the end or retail products to which the accused processes and apparatus correspond. Samsung's responses are deficient on their face.

With regard to Interrogatory No. 9, Samsung must be compelled to provide the information sought in subparts (b)-(d). These subparts seek the following information: b) retail name(s) or other retail product identification information; c) the description of all component parts; and d) the manufacturing process for each. Thus, Samsung has not correlated the products that are identified by their internal part numbers (subpart a) with the retail product names or other retail product identification associated therewith (subpart b) (e.g., retail products incorporating the parts identified by their internal part numbers). Samsung also has not identified the components in the products as requested in subpart (c). As to subpart (d), Samsung has not indicated whether the particular products identified are made according to the L18, L13, L9, L6 or L45 processes, [REDACTED]

(Bauer Decl. Ex. A at 52:12-53:10; 56:7-9; 56:18-23.; *see also*

Walker Decl. at 9.)

With regard to Interrogatory Nos. 28 and 29, again, there is no question that ON Semiconductor is entitled to information sufficient to correlate its designs with its actual products. Samsung does not refute this. All it has done in response to these interrogatories, however, is identify unconnected datasheets and circuit designs, without correlating the designs to the products. It should be compelled to provide this information.

CONCLUSION

For the foregoing reasons, ON Semiconductor's motion to compel the production of wafers, design rules, and complete responses to Interrogatory Nos. 9, 28 and 29 should be granted.

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2449779

**CERTIFICATE OF SERVICE**

I, the undersigned, hereby certify that on August 22, 2008, I electronically filed the foregoing with the Clerk of the Court using CM/ECF, which will send notification of such filing(s) to the following:

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I also certify that copies were caused to be served on August 22, 2008 upon the following in the manner indicated:

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